

Application Notes

Using Epson Dot Matrix Printers with

AppleWorks™

dBASE III PLUS™

DisplayWrite 4

Lotus® 1-2-3® and Symphony®

Microsoft® Word

MultiMate Advantage II™

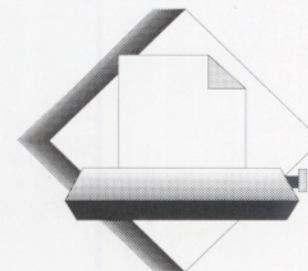
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Application Notes

For Epson Dot Matrix Printers

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This introduction contains general information about controlling your printer through your software, whatever applications you may be using. If you understand how software commands and printer drivers work, then skip ahead to the specific information on your application.

Sending Printer Commands

Your software continually sends commands to your printer and your computer. These commands instruct the printer to perform such actions as print in a particular typeface, feed the paper a certain amount after printing each line, and start printing on a particular place on the page.

Introduction

This booklet contains information on using specific software applications with your Epson® dot matrix printer. Many of the more popular applications are covered in detail. In addition, some of the information included – such as that on printer drivers – is general enough to help users of software not included here.

This information represents Epson's answers to some frequently asked questions about using software packages with our printers. To be of more general assistance, we have also included substantial information in our printer manuals about sending printer commands, selecting drivers, and performing other tasks related to computer-printer communication.

Although the software versions we describe may not be the latest, or may not be the version you have, most of the solutions in this booklet should apply to later versions.

This introduction contains general information about controlling your printer through your software, whatever applications you may be using. If you understand how software commands and printer drivers work, then skip ahead to the specific information on your application.

Sending Printer Commands

Your software continually sends commands to your printer and your computer. These commands instruct the printer to perform such actions as print in a particular typeface, feed the paper a certain amount after printing each line, and start printing on a particular place on the page.

Some programs let you send these commands yourself. This is a powerful feature because it allows you to enhance your text in ways that may not normally be available through the software. For example, many word processing programs do not offer italics, but by inserting a command in your document, you can use italics anywhere you like. The commands your printer recognizes are listed in your printer manual's Command Summary.

How you format commands depends on the software you are using. Some software programs accept only the decimal format, while others let you type in ASCII characters. (Some programs don't let you insert printer commands at all.) In addition, your application probably specifies certain punctuation you must use to enter the command.

If your software allows you to send commands to the printer, use your printer manual's Command Summary to find the command you want to send. Your software manual should explain exactly what format and punctuation are required.

Printer Drivers

Your software communicates with the printer through a *printer driver*, a module of your program that translates instructions from your software to your printer. Without printer drivers, for a software program to be compatible with 30 different printers there would have to be 30 different versions of the software on the market. Instead, the software manufacturer designs various printer drivers, and each serves as an interface between the software program and the printer for which it was designed. When you install the software, you select the printer driver designed for your printer.

Because software companies cannot always keep up with the number of new printers on the market, a software program may not include a driver for your printer. Most software includes Epson drivers, and if not, a standard printer driver usually works.

However, if your software does not come with a driver for your printer, or if the driver that is included does not take full advantage of your printer's features, you may be able to obtain a suitable printer driver, or you can modify one of your software's existing drivers.

First, see if there is an Application Note for your software program that explains how to solve the problem you are having. If the only solution is to get a new printer driver, contact the software manufacturer to see if the printer driver you need is available. If not, the manufacturer may be able to tell you of another company that makes a suitable driver.

Your dealer or manufacturer may also be able to tell you how to modify one of the printer drivers. However, if you are still having problems, try contacting your computer dealer or a users group for your software. Chances are that someone in the group has had the same problems you are having and can help you find a solution.

AppleWorks™

AppleWorks™ for the Apple® II is a program that combines word processing, data base management, and spreadsheet analysis. You can use all the features of AppleWorks with any Epson printer.

Getting Started

To use AppleWorks with your Epson printer, you must specify which type of printer you are using. The Printer Information menu lets you select up to three printers from the list of printers AppleWorks supports. To select a printer, follow these steps:

1. From the Main Menu, select the **Other Activities** option.
2. Select the **Specify information about your printer(s)** option to display the Printer Information menu.
3. Select the **Add a printer** option. The screen displays a list of the printers that AppleWorks supports.
4. Select a printer. The following chart shows you which AppleWorks selection to make based on which Epson printer you have.

A. The Tips on Printers chapter in the *Using AppleWorks* manual describes the printer features AppleWorks supports. The following table lists the features AppleWorks supports on Epson printers.

Printer selection

AppleWorks

MX series	Epson MX series
MX series with Grafrax+	Epson MX/Grafrax+
RX series	Epson RX Series
FX series	Epson FX Series
EX, JX, LX, LQ, and SQ series	Epson FX Series

- After you make your selection, name your printer anything you like.
- Tell AppleWorks how your printer is connected to your computer. If you have a computer with a built-in disk drive and one printer port, specify **slot 1** (this is the same as port 1). For other types of Apple II computers, specify the slot in which your printer interface card is installed.
- On the next screen that appears, change any settings that are not right for your printer. (For example, you may need to change the platen width to match the width of your printer – 80 columns or 136 columns).
- Repeat the preceding steps for each printer you wish to select (the maximum is three).
- Now select which printer you wish to use whenever you perform screen dumps (that is, whenever you print your screen by pressing H and the Open-Apple key. To do this, perform the first two steps above, select the **Open-Apple-H printer** option, and then select a printer from among those you have just defined.

Selecting Print Features

AppleWorks makes selecting print features easy. The **Printer Options** screen provides a complete list of all the print features AppleWorks supports. To select print features, follow these steps:

- Move your cursor to the place in your document where you want the print feature to start.
- Press the Open-Apple key with O. The **Printer Options** screen appears. This screen lists all the print features you can select.
- Type the two-letter code for each feature you want, and then press Enter. Repeat this for all the print features you want to select.
- After you select all the features you want, press Esc to leave the **Printer Options** display.

Note: When you select an option that turns on a print feature, such as **Boldface Begin**, the print feature applies to the rest of your text until you turn off the feature (in this case, by selecting **Boldface End**).

Commonly Asked Questions

- Q.** What typestyles, such as emphasized print or proportional spacing, are available with AppleWorks?
- A.** The Tips on Printers chapter in the *Using AppleWorks* manual describes the printer features AppleWorks supports. The following table lists the features AppleWorks supports on Epson printers.

dBASE III PLUS™

dBASE III PLUS™ does not require any special installation for your printer. For general use, it works with all Epson printers. However, there is a common printing problem encountered only when writing programs with dBASE III PLUS: sending the null character (ASCII 0) to the printer. This section describes how to solve this problem.

Note: If you have a problem with a software program *written* in dBASE III PLUS (rather than a problem with dBASE III PLUS itself), it is best to contact the manufacturer of that program.

Sending the Null Character (ASCII 0)

Many Epson printer commands let you use either the character 0 (decimal value 48) or the null character (decimal value 0), but a few commands, such as the Master Select (ESC !) command, require the null character. Since dBASE III PLUS does not let you send the null character CHR(0) to the printer, you need to create a program to do this.

The following BASIC program creates a binary program file called NULL.BIN. Once you create the file NULL.BIN, you can use it to send the null character to your printer.

Creating the NULL.BIN file

The easiest way to create the NULL.BIN file is by using a BASIC program. Follow these steps:

1. Start BASIC, and type the following program:

```
10 OPEN "null.bin" FOR OUTPUT AS #1
20 PRINT #1, CHR$(184) CHR$(0) CHR$(0)
   CHR$(186) CHR$(0) ;
30 PRINT #1, CHR$(0) CHR$(205) CHR$(23)
   CHR$(203) ;
40 CLOSE
```

2. Now run the program.
3. The BASIC program creates a binary program file called NULL.BIN that you can use to send the null character to your printer from dBASE III.

Using the NULL.BIN file

You must use the LOAD NULL command to load the binary program file into memory before you use it in your program. The CALL NULL command executes the binary program file. To use the NULL.BIN file when programming in dBASE III, follow these steps:

1. Load the NULL.BIN routine into memory by typing LOAD NULL and pressing Enter.
2. When you reach the point in your dBASE III program where you want to send the null character to the printer, type CALL NULL on the next line of your program.

Here's an example of a dBASE III program that uses the CALL NULL command. It uses the Master Select command to turn on emphasized print, and uses the same command with the null parameter to turn it off.

```
LOAD NULL

SET PRINT ON

SET CONSOLE OFF

? CHR(27) + "!" + CHR(8)

?? "Emphasized on "

? CHR(27) + "!"

CALL NULL

?? "Emphasized off"

? CHR(12)

SET PRINT OFF

SET CONSOLE ON
```

Note: Using the print line operator ? in the midst of a printer command could cause the insertion of a CR-LF (carriage return-line feed) sequence, which may give you incorrect results. In these cases, substitute the print command ??, which does not output a CR-LF sequence. Refer to your dBASE III documentation for more information on the printing commands ? and ??.

3. The NULL program is now loaded in your computer's memory. The next time you use the CALL NULL command in your program while dBASE III is still loaded, you do not have to use the LOAD NULL command first.

Note: If you have a very large program that consists of a number of separate modules, load the NULL.BIN module at the beginning of each program module in which it will be used.

1. Start BASIC, and type the following program:

```
10 OPEN "null.bin" FOR OUTPUT AS #1
20 PRINT #1, CHR$(160) CHR$(161) CHR$(162)
30 PRINT #1, CHR$(163) CHR$(164) CHR$(165)
40 CLOSE
```
2. Now run the program.
3. The BASIC program creates a binary program file NULL.BIN that you can use to send the null character to your printer from dBASE III.

Using the NULL.BIN file

Note: The NULL.BIN file is a binary file that contains the null character. It is used to send the null character to the printer. The NULL.BIN file is created by the BASIC program in the previous section. To use the NULL.BIN file, you must first load it into your computer's memory. Then, you can use the CALL NULL command in your program to send the null character to the printer. Refer to your dBASE III documentation for more information on the CALL NULL command.

3. The NULL.BIN file is now loaded in your computer's memory. The next time you use the CALL NULL command in your program while dBASE III is still loaded, you do not have to use the LOAD NULL command first.

DisplayWrite 4

IBM® has recently released a supplement to its DisplayWrite 4 word processing software that lets you use DisplayWrite with Epson printers. (Previously, you had to either use the IBM emulation mode or modify the DisplayWrite program.) This supplement is called the *IBM DisplayWrite 4 Printer Function Table Supplement for the IBM Personal Computer Family* and comes on a diskette available through authorized IBM dealers.

The diskette includes printer drivers (IBM calls these Printer Function Tables) for the Epson FX-286, LQ-1000, and GQ-3500 printers. The printer drivers let you control features such as line spacing, character size, highlighting functions, page layout, and various paper handling options, including a single-bin cut sheet feeder.

For information on using the printer drivers, see the README.PRN document included on the diskette. For information on any particular driver, such as which features the driver supports, see the user information document for that driver. This is the document with the same name as the driver but with a PRN suffix.

To print the README.PRN document, type the following at the DOS prompt and press Enter:

```
COPY README.PRN LPT1:
```

To print any of the other user information documents use the command above but type the name of the document you want to print in place of README.PRN.

• Run Lotus 1-2-3 on the Equity™ II in Hercules® mode.

Lotus® 1-2-3® and Symphony®

This application note provides you with information about using Lotus® 1-2-3® and Symphony® with Epson printers. Lotus 1-2-3 is a spreadsheet program that allows you to enter and manipulate data in a variety of sophisticated ways. Symphony is an integrated software package containing spreadsheet, word processing, database, and data communications capabilities. Both programs let you print spreadsheets and graphs of the data.

This note does not cover the use of all the features of these programs; instead, it offers solutions to the most commonly encountered questions asked by 1-2-3 and Symphony users. Therefore, it is not a substitute for the *Lotus 1-2-3 Tutorial* and the *Symphony How-To Manual*. The supplemental information provided here should help you get the most out of your Epson printer with these programs.

Specifically, this application note answers commonly asked questions on how to do the following:

- Select the typestyle for a worksheet
- Change typestyles within a worksheet
- Produce color graphics using Epson printers not listed in Lotus 1-2-3 or Symphony's Install program
- Produce correctly sized graphics
- Set up Lotus 1-2-3 to avoid timeout problems
- Run Lotus 1-2-3 on the Equity™ II in Hercules® mode.

Commonly Asked Questions

Q. How do I print an entire worksheet in condensed type using Lotus 1-2-3?

A. Lotus 1-2-3 gives you the ability to use a setup string, which is a string of ASCII or decimal codes that is sent to the printer before the data is sent. You can define the string for the current worksheet or as a default for all worksheets. Depending on how you define this string, the printer then applies the command in the string to either a single worksheet or all worksheets that are subsequently printed. The codes you need to insert (such as the codes to select condensed type) are listed in the Command Summary in your printer manual.

Entering a setup string as a default for all worksheets

Enter a Lotus 1-2-3 worksheet. The word **READY** appears in the upper right-hand corner of the screen. Press the slash (/) key to display the Main Menu.

From the Main Menu, press **W** to select the Worksheet submenu. Then press **G** to select the Global submenu, **D** to select the Default submenu, **P** to select the Printer submenu, and **S** to select the Setup submenu.

The program asks you to enter a setup string. Suppose you want to use condensed printing in all your worksheets. From your printer manual's Command Summary, you can see that the command for selecting condensed type in ASCII is **SI**, or in decimal, 15. To turn on condensed type, type `\015` and press Enter.

This default setting is now in effect each time you load the program.

Entering a setup string for the current worksheet

Enter a Lotus 1-2-3 worksheet. The word **READY** appears in the upper right-hand corner of the screen. Press the slash (/) key to display the Main Menu.

From the Main Menu, press **P** to select the Print submenu. Then press **P** again to enter the Printer submenu, **O** to enter the Options submenu, and **S** to enter the Setup submenu.

The program asks you to enter a setup string. Suppose now that you want to use condensed printing in your current worksheet. Since the command for selecting condensed type in ASCII is **SI**, or in decimal, 15, type `\015` and press Enter to choose condensed type.

Specifying more than one attribute

You can specify more than one print attribute either by using the Master Select (**ESC !**) command or by entering a series of commands. Master Select lets you choose a combination of modes with a single command.

If you use Master Select, remember that this command overrides print attributes you may have already set by individual commands; you may need to reselect these using Master Select. For example, if you have already selected condensed type and you wish to underline the condensed type, you must select underlined and condensed modes together using the Master Select command.

The setup string for selecting underlined and condensed with the Master Select command is:

```
\027\033\132
```

Since the setup string can contain a series of commands (ESC code sequences), you can also select more than one print attribute by entering more than one command. For example,

you can enter the individual commands for selecting condensed and underlined type by entering the following string (just remember to repeat the ESC code for each command that requires it):

```
\027\015\027\045\001
```

Note: This capability is especially important for the LQ-1500 printer, which requires you to turn off Letter Quality (LQ) mode before selecting condensed mode.

Q. How do I print an entire worksheet in condensed type using Symphony?

- A.** Symphony gives you the ability to use a setup string, which is a string of ASCII or decimal codes sent to the printer before the data is sent. You can define this string for the current worksheet or as a default for all worksheets. Depending on how you define this string, the printer then applies the command in this string to either a single worksheet or all worksheets that are subsequently printed. The codes you need to insert are listed in the Command Summary in your printer manual.

Entering a setup string as a default for all worksheets

Enter Symphony. Press F9 to enter the Services menu. A menu of choices appears at the top of your screen.

Press C to enter the Configuration submenu. Then press P to enter the Printer submenu, and I to enter the Init-String submenu.

The program asks you to enter a setup string. Suppose you wish to use condensed printing in all your worksheets. From your printer manual's Command Summary, you can see that

the command for selecting condensed type in ASCII is SI, or in decimal, 15. To choose condensed type, type \015 and press Enter.

This default setting is now in effect each time you load the program.

Entering a setup string for the current worksheet

Enter Symphony. Press F9 to enter the Services menu. A menu of choices appears at the top of your screen.

Press P to enter the Print submenu. Then press S to enter the Settings submenu, and I to enter the Init-String submenu.

The program asks you to enter a setup string. Suppose now that you want to use condensed printing in your current worksheet. Since the command for selecting condensed type in ASCII is SI, or in decimal, 15, type \015 and press Enter to choose condensed type.

Specifying more than one attribute

You can specify more than one print attribute either by using the Master Select (ESC !) command or by entering a series of commands. Master Select lets you choose a combination of modes with a single command.

If you use Master Select, remember that this command overrides print attributes you may have already set by individual commands; you may need to reselect these using Master Select. For example, if you have already selected condensed type and you wish to underline the condensed type, you must select underlined *and* condensed modes together using the Master Select command.

The setup string for selecting underlined and condensed with the Master Select command is:

```
\027\033\132
```

Since the setup string can contain a series of commands (ESC code sequences), you can also select more than print attribute by entering more than one command. For example, you can enter the individual commands for selecting condensed and underlined type by entering the following string. (Just remember to repeat the ESC code for each command that requires it.)

```
\027\015\027\045\001
```

Note: This capability is especially important for the LQ-1500 printer, which requires you to turn off Letter Quality (LQ) mode before selecting condensed mode.

Q. How do I print a part of my worksheet in a different typestyle? For example, how do I print a title in double-wide type and the rest of my worksheet in condensed type?

A. Releases 2 and 2.01 of Lotus 1-2-3 and all versions of Symphony give you the ability to insert codes into specific sections of a worksheet. This allows you to change typestyles in the middle of a worksheet to highlight key data. The codes you insert are the same printer codes described above. The difference is that codes within a worksheet must be inserted on an empty row (you may need to insert a blank row).

For example, suppose you want to print the title of a worksheet in double-wide type and the rest of the worksheet in condensed type.

Enter the worksheet and move to the first cell.

Insert an empty row if the first row is not empty. In Lotus 1-2-3, you do this by pressing the slash key(/), then W for Worksheet, I for Insert, and R for Row. The program displays the current cell address. Press Enter, and your prompt returns. In Symphony, you insert an empty row by pressing I for Insert, and R for Row. The program displays the current cell address. Press Enter, and your prompt returns.

At the prompt, type:

```
||\14
```

This is the printer code (in decimal) to turn on double-wide mode for one line. The dual vertical bars (called pipes) let the program know that what follows are not printable characters but control codes to be sent to the printer.

Type the worksheet title on the next row down, and press Enter.

On the row immediately after the title, insert an empty row if it is not already empty and type:

```
||\015
```

This turns on condensed mode for the rest of the document.

Q. I have an LQ-2500 printer and I would like to print color graphics. How can I do this?

A. If you have Lotus 1-2-3 Releases 2 or 2.01, or if you have Symphony Releases 1.1 or 1.2, you can buy a graphics driver for the LQ-2500 printer. The LQ-2500 graphics driver lets you print high- or low-resolution color graphics. For details on obtaining the driver, contact Phoenix Technologies Ltd. at 1-800-THE-DRVR.

If you do not wish to purchase a driver or if you have Release 1A of Lotus 1-2-3 or Release 1 of Symphony, you can print in color using the JX-80 driver supplied with the program.

However, the printer produces only low-resolution output using this driver. In addition, this driver produces a printout that is in the incorrect aspect ratio. The printout appears longer than it should; for example, pie graphs will not be printed as circles, but as ovals. To solve this problem, see the next question.

Use the Install program supplied with your application to select the JX-80 driver as your graphics driver. See your software manual for more information about using the Install program.

Q. I have an LQ printer and my graphics printout appears "stretched" the long way. How do I correct this?

- A.** The problem is caused when you use an Epson 9-pin driver (such as the JX-80 driver) with a 24-pin printer (such as the LQ-2500). The printout appears in the incorrect aspect ratio. For example, pie graphs will not be printed as circles, but as ovals.

Please note, however, that you can get a better printout by buying the Lotus driver for the LQ-2500 (see the preceding question). That driver prints graphics in two resolutions and does not require you to make the manual correction described below.

Printing a graph in the correct aspect ratio

1. Enter PrintGraph. Then perform the following steps:
 - a. Press S to enter the Settings submenu.
 - b. Press I to enter the Image submenu.
 - c. Press S to enter the Size submenu.

- d. Press F to select a full-size graph, or H to select a half-size graph.

2. The top margin and height values are displayed on the screen. Write down the top margin and height and multiply these figures by 5/6 to get new values for the height and top margin.

3. Perform the following steps:

- a. Press M to enter the Manual submenu.
 - b. Revise the top margin and height by inserting the new values you got when you multiplied by 5/6. To modify the top margin, press T to change the Top margin value. Type the new value, and press Enter.

To modify the height, press H to change the Height value. Type the new value, and press Enter.

- c. Press ESC until you return to the Main Menu.

4. From the PrintGraph menu, press S to enter the Settings submenu. Press S (for Save) to make the changes permanent.

Q. I am using an EX printer with the color option and I want to print color graphics. How can I do this?

- A.** If you have the color option installed, you can use the JX-80 graphics driver to print in color.

Use the Install program supplied with your software to select the JX-80 driver as your graphics driver. See your software manual for more information about using the Install program.

Q. When I print, the output stops printing and the screen displays the message PRINTER ERROR. What's happening?

- A. This problem may occur if your computer is attached to the parallel port of your printer.

In order to speed up processing, Lotus 1-2-3 uses a special routine for sending data through the parallel port. Because Lotus 1-2-3 sends data in a special way, the printer and the computer may get out of step with each other as data is sent and received for printing. Then printing stops and the **PRINTER ERROR** message appears. This is referred to as a timeout error.

The default printer port choice when you install Lotus 1-2-3, **Parallel 1**, selects a Lotus routine for sending data through the parallel port. To make sure your computer and printer are in sync, you need to select **DOS device LPT1** instead of **Parallel 1** in the Interface menus of Lotus 1-2-3 and PrintGraph. This causes Lotus 1-2-3 and PrintGraph to send data to DOS device LPT1: according to the parameters you set using the DOS MODE command. (If you need information on the MODE command, see your DOS manual.)

Changing the setting in 1-2-3

1. Enter a Lotus 1-2-3 worksheet. The word **READY** appears in the upper right-hand corner of the screen. Press the slash (/) key. This displays the Main Menu.
2. From the Main Menu, press **W** to select the Worksheet submenu.
3. From the Worksheet submenu, press **G** to select the Global submenu.
4. From the Global submenu, press **D** to select the Default submenu.

5. From the Default submenu, press **P** to select the Printer submenu.
6. From the Printer submenu, press **I** to select the Interface menu.
7. Press **5** to select **DOS Device LPT1** from the choices displayed.
8. Press **ESC**.
9. Press **U** to update the current setting.

Changing the setting in PrintGraph

1. Enter PrintGraph. Press **S** to select the Settings submenu.
2. From the Settings submenu, press **H** to select the Hardware submenu.
3. From the Hardware submenu, press **I** to select the Interface submenu.
4. Press **5** to select **DOS Device LPT1** from the choices displayed.
5. Press **ESC**.
6. Press **S** to save the current setting.

- Q. I have an Equity™ II computer and I want to run Lotus 1-2-3 in Hercules® mode. How can I do this?

- A. In order to use Lotus 1-2-3 version 1A in Hercules mode with the Equity II, you need a file called HGC.COM. Contact your dealer for information on obtaining this file.

To use this file, follow these steps:

1. Use the Install program supplied with Lotus 1-2-3 to install Hercules graphics. Follow the instructions in the user manual for your application.
2. Before each time you run Lotus 1-2-3, type HGC FULL at your system prompt and press Enter. This memory-resident program then goes into effect. (You can also enter this command into your AUTOEXEC.BAT file so that it goes into effect when you boot your computer.)

After running this program, you will be able to display monochrome graphics from Lotus 1-2-3 on your Equity II.

Microsoft® Word

Getting Started

Microsoft® Word is well adapted for use with Epson printers. Microsoft Word's printer driver files contain many of the commands used by Epson printers, so you can use most printer features with Word.

The first step in using Microsoft Word with your Epson printer is to select the correct printer driver for your printer model and copy it to your Word diskette or subdirectory. With Microsoft Word Version 4.0, the following drivers are available:

Epson printer models

Printer driver file

EX-800, EX-1000	EPSONEX.PRД
FX series (except FX-86e, FX-286e)	EPSONFX.PRД
FX-86e, FX-286e	EPSONFXE.PRД
JX-80	EPSONJX.PRД
LQ-800, LQ-1000 (without identity module)	LQ800.PRД
LQ-800, LQ-1000 (with Epson identity module)	LQ800IDM.PRД
LQ-1500	EPSONLQ.PRД
LQ-2500	LQ2500.PRД
LX series	EPSONLX.PRД
MX series	EPSONMX.PRД
MX-80 with Grafrax	GRAFRAX.PRД
MX-80 with Grafrax Plus	EPSONMXG.PRД
RX-80	EPSONRX.PRД
SQ-2000	EPSONSQ.PRД

Note: If you are using one of the emulation modes available with your Epson printer, you should select the printer driver for the printer you are emulating. For example, if your printer is set for IBM emulation mode, you should use either the IBMPRO.PRD printer driver file (for the FX-286, FX-86e, and EX-800/1000) or the IBMPROXL.PRD printer driver file (for the FX-286e).

You can copy the printer driver file to your Word diskette or subdirectory in one of two ways:

If you are installing Word for the first time, it's best to use Word's SETUP program. This program creates working disks that contain all the Word files you need. See *Using Microsoft Word* for complete instructions on using the SETUP program.

If you have already set up Microsoft Word and want to add a printer driver for your Epson printer, follow the steps below. An LQ-2500 printer is used as an example.

1. Locate the file LQ2500.PRD on one of your Word printer diskettes.
2. Copy LQ2500.PRD to your Word diskette or subdirectory.
3. Start the Word program.
4. Select the **Print Options** command.
5. The first field in the screen that appears is labeled **printer**. To select a printer driver, press the F1 key to see a list of available printer drivers. (On Word versions before 4.0, press the ← key.)
6. Use the arrow keys to highlight the name of the driver you wish to use and press Enter. The driver you select here is available immediately and will be retained for future Word sessions as well.

Selecting Print Features

Nearly all of the features available on Epson printers are supported by Microsoft Word. To use any of the features listed in the table below, use the Word command shown on the right. For commands that change the way the characters themselves look (such as italic print), select the text to be formatted and then carry out the command.

For more information on these commands, select the command and then press Alt-H for help, or see the *Using Microsoft Word* or *Microsoft Word Reference* manuals.

Feature	Microsoft Word command
Bold	Format Character bold
Font selection	Format Character font name
Horizontal tabs	Format Tab
Italic	Format Character italic
Justification	Format Paragraph alignment
Line spacing	Format Paragraph line spacing
Margins	Format Division Margins, Format Paragraph
NLQ print	Format Character font name
Number of copies	Print Options copies
Page size	Format Division Margins
Paper input tray	Print Options feed
Pitch	Format Character font size
Point size	Format Character font size
Proportional spacing	Format Character font name
Superscript, subscript	Format Character position
Underline	Format Character underline

Commonly Asked Questions

Q. How do I use a cut sheet feeder with Microsoft Word?

A. If you have an LQ-2500, the answer is easy. Because the printer driver file for this printer fully supports dual-bin sheet feeders, you simply select your desired paper input source from the Print Options screen.

However, if you are using a cut sheet feeder with any other Epson dot matrix printer model, you must first modify the printer driver file. This is done with the MAKEPRD utility program furnished with Microsoft Word. The following steps show you how to do this, using the EPSONFXE.PRD printer driver file as an example. (You can follow this same procedure if you are modifying a different driver – just use a different file name.)

These instructions assume that you are in your Word subdirectory and that your printer driver file is in the same directory. If not, be sure to include the needed path information.

1. First, make a backup copy of your printer driver file (in this case, EPSONFXE.PRD). This ensures that you can start over again if anything goes wrong. After you modify and test your new printer driver, you can erase this backup file.
2. Insert a copy of the disk with the MAKEPRD.EXE file into drive A. At the DOS prompt, type `A:MAKEPRD` and press Enter.

In the current version, the MAKEPRD.EXE file is located on the Thesaurus disk. It could also be on your Utilities disk or some other disk. See your Word manuals and the README file on the Utilities disk for more information.

3. When the prompt **Name of PRD file** appears, type the name of the PRD file (EPSONFXE.PRD) and press Enter.
4. When the prompt **Name of Text file** appears, type EPSONFXE.DOC and press Enter.
5. Next, press T to select **PRD to Text conversion**, and then press Enter.
6. The MAKEPRD program now converts the printer driver file to ASCII format so that you can edit it using Microsoft Word.
7. Load the EPSONFXE.DOC text file into Word. See your *Using Microsoft Word* manual if you need more information.
8. Use the **Search** command to find **byte:38**. This is the beginning of the section you need to modify.
9. Make the following changes by adding the codes beginning with the double quote marks shown below:

byte:38 mod:0 `"^[^Y^A"`
byte:42 mod:0 `"^[^YR"`
byte:46 mod:0 `"^[^Y^B"`
byte:50 mod:0 `"^[^YR"`
10. Use the **Transfer Save** command to save the file – making sure that **No** is selected for the **formatted** option.
11. Now, exit Microsoft Word and run the MAKEPRD program again.
12. Specify the PRD and Text file names as you did earlier.

13. Press **P** to select **Text to PRD conversion**. This converts the file you just modified back into the format used by Word. The display asks whether you want to overwrite the old PRD file. Press **Y** and then **Enter**.

Note: It is not necessary to save the old version of your printer driver file. If you ever remove the sheet feeder from your printer, just select **Continuous** (for continuous forms) or **Manual** (for single sheets) from the Print Options screen. Word then ignores the sheet feeder commands.

Also, be sure to set the number of lines per page according to which paper feed system you have. Cut sheet feeders use fewer lines per page than other paper feed systems. Use the following Microsoft Word command to set the page length:

Format Division Margins page length

Q. How do I use graphics or international characters?

- A. To use graphics characters or international characters, you first need to find the character you want in your printer manual's character tables.

To insert the desired character in your document, hold down the **Alt** key while you type the decimal value of the character using the numeric keypad on your keyboard (the keypad on the right, not the number keys across the top).

Note: Not all Epson printers support graphics characters. Also, if your printer does support graphics characters, but these characters do not print as expected, you may need to select the graphics character table with the **ESC t** command, **SelectType**, or by setting a DIP switch, depending on your printer. See your printer manual for more information.

If you print international characters, be sure to select the appropriate country (such as USA, the printer's default). Depending on which printer you have, you can select a country by setting DIP switches, using **SelectType**, or with the **ESC R** software command.

The character displayed on your screen may not be the same as the one you selected from the character table in your printer manual. However, when you print the document, the character that prints should match the one shown in your printer manual. Try printing the document to see if the character prints as you expect.

If the wrong character prints, then the Character Translation Table (which is part of most Word printer driver files) has translated the code you entered to print something else. To fix this, you need to modify the table, using the **MAKEPRD** utility program.

The following steps show you how to modify the Character Translation Table, using the **EPSONFXE.PRD** printer driver file as an example. (You can follow this same procedure if you are modifying a different driver—just use a different file name.)

These instructions assume that you are in your Word subdirectory and that your printer driver file is in the same directory. If not, be sure to include the needed path information.

1. First, make a backup copy of your printer driver file (in this case, EPSONFXE.PRD). This ensures that you can start over again if anything goes wrong. After you modify and test your new printer driver, you can erase this backup file.

2. Insert a copy of the disk with the MAKEPRD.EXE file into drive A. At the DOS prompt, type `A:MAKEPRD` and press Enter.

In the current version, the MAKEPRD.EXE file is on the Thesaurus disk. It could also be on your Utilities disk or some other disk. See your Word manuals and the README file on the Utilities disk for more information.

3. When the prompt **Name of PRD file** appears, type the name of the PRD file (EPSONFXE.PRD) and press Enter.

4. When the prompt **Name of Text file** appears, type EPSONFXE.DOC and press Enter.

5. Next, press T to select **PRD to Text conversion** and then press Enter.

6. The MAKEPRD program now converts the printer driver file to ASCII format so that you can edit it using Microsoft Word.

7. Load the EPSON.FXE.DOC text file into Word. See your *Using Microsoft Word* manual if you need more information.

8. Use the **Search** command to find {T. This is the beginning of the Character Translation Table section.

9. The changes you need to make to the file depend upon the graphics characters you want to print. See the *Microsoft Word Printer Information* manual for instructions

on modifying the Character Translation Table. You'll also need to refer to the character tables in your Epson printer manual.

10. When you finish your modifications, use the **Transfer Save** command to save the file. Make sure that **No** is selected for the **formatted** option.

11. Now exit Microsoft Word and run the MAKEPRD program again.

12. Specify the PRD and Text file names as you did earlier.

13. Press P to select **Text to PRD conversion**. This converts the file you just modified back into the format used by Word. The display asks whether you want to overwrite the old PRD file. Press Y and then Enter.

1. Select the appropriate Printer Action Table (PAT) file for your printer model from the following list.

Epson printer models	PAT file
IX series	EPSONIX.PAT
FX-80/100	EPSONFX.PAT
FX-85/185, FX-86/286, FX-86e/286e	EPSONLQ.PAT
IX-80	EPSONFX.PAT
LQ series	EPSONLQ.PAT
LQ-1500 proportional spacing	LQ1500PS.PAT
LX-80	EPSONLQ.PAT
MX series (without Graftrax)	EPSONMX.PAT
MX series (with Graftrax)	EPSONFX.PAT
RX series	EPSONFX.PAT
SQ-2000	EPSONLQ.PAT

MultiMate Advantage II™

Getting Started

The MultiMate Advantage II™ word processing program works well with Epson printers. MultiMate® communicates with your printer using commands contained in on-line Printer Action Tables, or PATs. (These are more commonly known as printer drivers.) Printer Action Tables are stored on your MultiMate Printer Tables diskette. The Printer Tables diskette also contains other tables that provide additional information to MultiMate about your printer model.

To run MultiMate on your Epson printer, follow these steps:

1. Select the appropriate Printer Action Table (PAT) file for your printer model from the following list.

Epson printer models

PAT file

EX series	EPSONFX.PAT
FX-80/100	EPSONFX.PAT
FX-85/185, FX-86/286, FX-86e/286e	EPSONLQ.PAT
JX-80	EPSONFX.PAT
LQ series	EPSONLQ.PAT
LQ-1500 proportional spacing	LQ1500PS.PAT
LX-80	EPSONLQ.PAT
MX series (without Grafrax)	EPSONMX.PAT
MX series (with Grafrax)	EPSONFX.PAT
RX series	EPSONFX.PAT
SQ-2000	EPSONLQ.PAT

Note: If you are using the IBM emulation mode available with some Epson printers, do not select any of the above Epson printer PAT files. Instead, use the PROPRINT.PAT file.

2. Copy the PAT file for your printer model from the MultiMate Printer Tables diskette to your MultiMate diskette or subdirectory. Use either the PRINTERS program described in the MultiMate *Getting Started* manual or the DOS COPY command to copy the files.
3. If you are using a cut sheet feeder, copy the EPSON.SAT file from the MultiMate Printer Tables diskette to your MultiMate diskette or subdirectory.
4. If you want to use MultiMate's line and box drawing feature, copy the EPFXLINE.PAT and EPSON. files to your MultiMate diskette or subdirectory. This lets you use line drawing characters with most Epson printers.

Selecting Print Features

The printer features you can use with MultiMate are usually adequate for most word processing needs. However, for more advanced applications, or if you cannot get one of MultiMate's printer features to work with your printer, see the next section, Commonly Asked Questions.

To use any of the features listed in the following table, use the MultiMate command or option screen shown on the right. For text formatting commands, such as Alt-Z for emphasized, insert the command immediately before and after the text you want formatted. MultiMate then displays a formatting symbol that is not printed.

For more information on these commands, see the *Using MultiMate Advantage II* manual.

Printer feature	MultiMate command
Doublestrike	Not Available
Emphasized	Alt-Z
Font selection	Alt-C
Horizontal tabs	Format (F9)
Italic	Alt-C
Justification	Document Print Options screen
Line spacing	Format (F9)
	Document Print Options screen
Margins (left/right)	Format (F9)
	Document Print Options screen
Margins (top/bottom)	Document Print Options screen
Document Reorganization	Ctrl-F2
NLQ print	Alt-N (return to draft with Alt-D)
	Document Print Options screen
Number of copies	Document Print Options screen
Page size	Document Print Options screen
Paper input tray	Document Print Options screen
Pitch	Alt-C
Point size	Alt-C
Proportional spacing	Document Print Options screen
Superscript	Alt-Q (end with Alt-W)
Subscript	Alt-W(end with Alt-Q)
Underline	Shift plus _
	Alt plus =
	Alt plus -
	Ctrl plus -

Commonly Asked Questions

Q. What typesets, such as italic or proportional spacing, are available with MultiMate?

A. The following table shows you which features are available for the Printer Action Table you are using.

PAT file	LQ	Emp	SS	UL	Ital	Color	PS
EPFXLINE		•	•	•			•
EPSONFX		•	•	•	•	•	•
EPSONLQ	•	•	•	•	•	•	•
EPSONMX		•	•				
LQ1500PS	•	•	•	•			•

LQ = Letter Quality printing (MultiMate calls this near letter quality)

Emp = emphasized

SS = superscript/subscript

UL = underline

PS = proportional spacing

To use one of the above features even if it is not available with your PAT file, look up the command for that feature in your printer manual's Command Summary. You can then modify the Printer Action Table using the MultiMate's UTILITY program. See the instructions for this procedure in the *MultiMate Advantage II Printer Guide*.

You can add commands for features other than those listed in the table above by creating new fonts that contain the desired features. This method is convenient for features you use regularly. (For features that you use infrequently, see the answer to the next question for instructions on embedding commands in your MultiMate document.)

To create a new font, follow these steps:

1. Look up the feature in your printer manual's Command Summary to see if your printer offers the feature you want.
2. Start the MultiMate UTILITY program and select the EPSONFX Printer Action Table. (See the *MultiMate Advantage II Printer Guide* for instructions on using the UTILITY program.)
3. To see an example of how a font is defined using printer commands, examine the EPSONFX Printer Action Table to see how fonts A and B are used to turn italics off and on. Compare the codes listed for fonts A and B to the codes listed in your printer manual's Command Summary for turning on and off italics.
4. Now turn back to your printer manual's Command Summary to see what codes you need to insert to get the features you want.
5. Use the UTILITY program to modify your printer's PAT file with codes for the features you want to use. (Make sure you modify your printer's PAT file this time, and not the EPSONFX file if that isn't the one you normally use.)

Q. How do I embed printer commands?

A. You can embed any Epson printer command in your MultiMate document. Follow these steps:

1. Look up the decimal codes for the feature you want in your printer manual's Command Summary.

2. Press Alt-A at the location in your document where you want the print feature to start. This inserts a symbol into your document that tells MultiMate that the numbers that follow are printer control codes.

Note: Never insert the Alt-A symbol in the first column of a line. (If necessary, insert a space first.)

3. Type the first decimal code in the printer command using the numeric keypad (the keypad on the right, not the number keys across the top). Make sure you type three digits for the decimal code; you may need to add a zero at the beginning.
4. Press Alt-A again to insert another symbol into your document.
5. Type the next decimal code in the printer command (if there is another code).
6. Repeat Steps 4 and 5 as necessary until you have inserted the complete command.

Although you can insert any command with this method, commands that modify pitch, line spacing, margins, and formatting may interfere with MultiMate's pagination and formatting. It is a better idea to use MultiMate's own formatting features to control these functions.

Q. How do I use graphics characters?

- A. To insert graphics characters or foreign language characters into your MultiMate document, look up the decimal value of the character you want to use in your printer's character table. This table is included in your printer manual's appendix of tables. Then hold down the Alt key while you type the decimal

value of the character using the numeric keypad on your keyboard (the keypad on the right, not the number keys across the top).

Note: Not all Epson printers support graphics characters. Also, if your printer does support graphics characters, but these characters do not print as expected, you may need to select the graphics character table with the ESC t command, SelectType, or a DIP switch, depending on your printer. See printer manual for more information.

If you print international characters, be sure to select the appropriate country (such as USA, the printer's default). Depending on which printer you have, you can select a country by setting DIP switches, using SelectType, or with the ESC R software command.

The character displayed on your screen may not be the same as the one you selected from the character table in your printer manual. However, when you print the document, the character that prints should match the one shown in your printer manual, regardless of what character is displayed on the screen.

For characters you use frequently, there are two other methods you can use. One method is using MultiMate's Alternate Keyboards feature. With this feature you can insert unusual characters in your document by holding down the Ctrl key while pressing a single key. See the *Using MultiMate Advantage II* manual for a list of available characters and instructions on using Alternate Keyboards.

Another method is to modify the Character Width/Translation Table (CWT). With this method you can convert characters displayed by seldom used keys so that they print as something completely different. For example, you can modify the table

so that whenever you type the @ sign a scientific symbol is inserted into your document instead. See the *MultiMate Advantage II Printer Guide* for instructions on this procedure.

Q. How do I use a cut sheet feeder with MultiMate Advantage II?

- A. First, make sure that the file EPSON.SAT is in your MultiMate diskette or subdirectory. This is your printer's Sheet Feeder Action Table (SAT) file. If your MultiMate diskette or subdirectory does not contain the EPSON.SAT file, use the DOS COPY command to copy the file from the \PRINTERS subdirectory of the Printer Tables diskette.

Your single-bin sheet feeder should work fine with MultiMate as long as you have the EPSON.SAT file in your MultiMate diskette or subdirectory. If you have a dual-bin sheet feeder, however, you must modify this file. To do this, follow the instructions for modifying the Sheet Feeder Action Table on page 6-9.

If you want to change MultiMate's printer default settings so that the sheet feeder is selected automatically each time you print, follow the instructions in the next section for changing the printer defaults.

Changing the printer defaults

1. Press Alt-4 to display the Additional Printer Functions menu.

2. Select **Edit Printer Defaults** from this menu. A screen appears similar to the one below.

EDIT PRINTER DEFAULTS			
Start Print At Page Number	001	Left Margin	000
Stop Print After Page Number	999	Tab Margin	000
Enhanced [N] / Draft [Y]	N	Double Space The Document [N or Y]	N
Number of Original Copies	001	Default Pitch [4 = 1- CPI]	4
Printer Action Table (PAT) EPSONLQ		Sheet Feeder Action Table (SAT)	
Use: (P) arallel/ (S) erial/ (F) ile/ (L) ist		Sheet Feeder Bin Numbers [0-3]	
(A) uxiliary/ (C) onsole		First Page 0 Middle 0 Last Page 0	
Device Number	001	Char. Width/Translate (CWT)	
Pause Between Pages [N or Y]	N	Background/Foreground [B or F]	B
Print Comments [N or Y]	N	Justification [N or Y or (M) icro]	N
Print Doc. Summary Screen [N or Y]	N	Proportional Spacing [N or Y]	N
Print This Screen [N or Y]	N	Lines Per Inch [6 or 8]	6
Header/Footer First Page Number	001	Paper Length (lines per page)	066
Starting Footnote Number [1-749]	001	Default Font	A
		Remove Queue Entry When Done [Y or N]	Y

Press F10 when finished, ESC to exit
Press F1 for PATs, F2 for SATs, F3 for CWT

S:↓ N:↓

3. Move the cursor to the **Sheet Feeder Action Table** field and type EPSON.
4. Move the cursor to the **Sheet Feeder Bin Number** field. Press 1 if you have a single-bin feeder or if you have a dual-bin feeder but want bin 1 to be your default bin. Press 2 if you have a dual-bin feeder and want your default bin to be bin 2.

Modifying the SAT for a dual-bin sheet feeder

1. Exit MultiMate and start the UTILITIES program by typing UTIL at the DOS prompt.
2. Select **Printer Tables Editor** from the main menu.

3. Select **Sheet Feeder Action Tables** from the Printer Tables Editor menu.
4. Select **Edit an Old File** from the Sheet Feeder Action Tables menu.
5. Select the **EPSON** Sheet Feeder Action Table. A screen appears similar to the one below.

Edit Sheet Feeder Table EPSON
F2 will change input mode to ASCII

	BIN 1	BIN 2	BIN 3
Eject current sheet	.....	.....	.....
Select bin	.....	.....	.....
Load sheet from bin	.....	.....	.....
OR			
Eject sheet & load sheet	← ↓ R ← ↓ 1 ♀ 1B19521B19310C	.....	← ↓ R ← ↓ 1 ♀ 1B19521B19310C

6. Move the cursor to the **BIN 2** field of the **Eject sheet & load sheet** line.
7. Press F2 to change the input mode to ASCII. Now you can edit the top line of code in this field.
8. Move the cursor to the **1** in the line of code and change it to **2** by typing **2** over it. This changes the code so that you can select bin 2 through the MultiMate software.

pfs®: write

pfs: First Choice

pfs®: write is a word processing program. pfs: First Choice is an integrated software package that contains spreadsheet, word processing, database, and data communications capabilities.

Commonly Asked Questions

Q. How do I print an entire document in a particular typestyle using WRITE?

A. To print an entire document in a desired typestyle, use the **Printer Control Codes** item on the Print menu. This lets you send printer control codes to your printer before sending the data. To find the printer control codes for the typestyle you want to use, look up the command for that typestyle in your printer manual's Command Summary. You can also find printer commands for many other printer features in your printer manual's Command Summary. WRITE accepts only decimal codes, so note the codes listed in the decimal row of the command listing.

If you want to print a document in condensed type, for example, select the Print menu, and then move the cursor to the **Printer Control Codes** prompt. Type the decimal code 15, the printer command for selecting condensed type. You can also send a series of control codes by separating them with commas when you type them. Don't insert any spaces between codes.

Q. How do I print only part of a document in a particular typestyle using First Choice or WRITE?

- A. Both WRITE and the First Choice word processor let you insert printer codes directly into a document. This lets you change the typestyle of a certain word, line, or section of text within a document. See the your printer manual's Command Summary for a list of printer control codes and their functions. Both WRITE and First Choice accept only decimal codes, so note the codes listed in the decimal row of the command listing.

To insert printer control codes within your document, move your cursor to the location in your document where you want the command to start and type a printer command with the format:

*PRINTER *n*, *n**

where each *n* represents a decimal printer control code. You can insert as many control codes as you need between the asterisks. Just be sure to separate the codes with commas (don't type any spaces between codes).

For example, to print one line of text in double-wide mode, display the text you wish to print in that font and insert the following string at the beginning of the first line of text, including the asterisks:

PRINTER 14

You can also abbreviate the string of codes by typing the following instead:

P 14

Some commands turn themselves off automatically, such as the example above, which tells your printer to print only one line in double-wide mode. For other commands, however, you must insert a command when you want to turn off the print feature.

Although you cannot insert printer codes into a First Choice spreadsheet or report, you can put the spreadsheet or report information into a First Choice document, and then format the document for your printer using the method just described.

Q. I have a cut sheet feeder installed on my printer. How can I feed paper automatically using WRITE or First Choice?

- A. Both WRITE and First Choice let you pause the printer between pages, which allows you to print on single sheets of paper. However, they do not have a built-in command to control a cut sheet feeder during printing. To get around this, insert the printer control code for a form feed at the top of every page:

PRINTER 12

When you print the document, look at the Print menu and make sure the **Pause between pages** option is set at **N** (the default). Now when you print, the cut sheet feeder automatically feeds a sheet of paper to the printer before it prints a new page.

For instructions on inserting printer control codes, see the answer to the previous question.

Q. Although you cannot insert printer codes in a First Choice document, you can insert them in a document created with the First Choice software. How can I insert printer codes in a document created with the First Choice software?

A. Both WRT and First Choice let you paste the printer codes into a document. To do this, you must first copy the codes from the First Choice software. To copy the codes, click on the **Copy** button in the **First Choice** software. Then, click on the **Paste** button in the First Choice software. The codes will be pasted into the document.

Q. I have a cut sheet feeder installed on my printer. How can I tell the printer to use the cut sheet feeder?

A. When you print the document, look at the First menu and make sure the **Use cut sheet feeder** option is set at 1 (the default). Now when you print, the cut sheet feeder will be used. For example, to print one line of text in double-width mode, you would type the following string at the beginning of the first line of text: `*P 14*`. This string tells the printer to print only one line in double-width mode. For other commands, however, you must insert a command when you want to turn off the print feature.

Q. I want to print a document with a cut sheet feeder. How can I tell the printer to use the cut sheet feeder?

A. When you print the document, look at the First menu and make sure the **Use cut sheet feeder** option is set at 1 (the default). Now when you print, the cut sheet feeder will be used. For example, to print one line of text in double-width mode, you would type the following string at the beginning of the first line of text: `*P 14*`. This string tells the printer to print only one line in double-width mode. For other commands, however, you must insert a command when you want to turn off the print feature.

PrintMaster™ Plus

PrintMaster™ Plus is a program for printing greeting cards, letterheads, posters, and banners. It works with all Epson printers.

Getting Started

To use PrintMaster Plus with your Epson printer, you must specify what type of printer you are using. To do this, follow these steps:

1. Select the **Hardware Configuration** option from the Main Menu.
2. Next, choose the **Select Printer** option to display PrintMaster's list of printer selections. The following table shows you which PrintMaster printer selection to choose for your printer model:

Printer type	PrintMaster option
MX, FX, EX, LX, JX, and RX series	FX80
LQ and SQ series	LQ1500

Commonly Asked Questions

Q. How do I use Print Shop with an Epson 24-pin (LQ) printer?

A. Print Shop doesn't include a driver for 24-pin printers. When you use Print Shop with a 24-pin printer, your printout is elongated vertically.

Print Shop™

Print Shop™ is a program for printing greeting cards, letterheads, posters, and banners. It works with all Epson 9-pin printers, but Epson 24-pin printers require a special printer driver, as explained below.

Getting Started

To use Print Shop with your Epson printer, you must specify what type of printer you are using. To do this, follow these steps:

1. Select the **Setup** option from the Main Menu.
2. When a prompt appears asking you which printer you have, select the line that includes the name Epson.
3. Next, a prompt asks you what type of ribbon you have. If you have an Epson color printer with a color ribbon, select the **Four Color** option. Otherwise, select the **Single Color** option.

Commonly Asked Questions

- Q.** How do I use Print Shop with an Epson 24-pin (LQ) printer?
- A.** Print Shop doesn't include a driver for 24-pin printers. When you use Print Shop with a 24-pin printer, your printout is elongated vertically.

The solution to this problem is to purchase a separate printer driver program. There is a printer driver called LQPatch™ that lets you use Print Shop with your Epson 24-pin printer. You run LQPatch before you start Print Shop. It resides in your computer's memory and translates printer commands so your 24-pin printer works correctly.

For more information on the LQPatch software, contact:

M.A.P. Systems, Inc.
1120 NASA Road One #320
Houston, TX 77058
(800) 527-2851

WordPerfect™

Commonly Asked Questions

Q. What typestyles – such as italic or proportional spacing – are available using WordPerfect™?

A. WordPerfect gives you a choice of eight different typestyles (called *fonts* in WordPerfect) that you can select by pressing Ctrl-F8. WordPerfect also lets you select the appropriate pitch (characters per inch) for the fonts you choose. The typestyle that prints when you select a particular font and pitch depends on your printer and the version of WordPerfect you are using.

If you have version 4.2, you can find out which fonts and pitches are defined for the WordPerfect fonts 1 through 8 by typing `prhelp` at the DOS prompt. (This program is available on your Printer 2 diskette.) The screen displays a list of printers. After you highlight your printer using the arrow keys and press 2 to select the **Look** option, the screen displays fonts, the pitches available for each font, and other features accessible through WordPerfect on your printer. Press Shift-PrtSc (or just PrtSc, on some keyboards) to print the screen so you have a record of this information for your printer.

Note: When you use a printer definition (driver) that is different from your printer model, the printout you obtain by typing `prhelp` does not necessarily give you an accurate representation of which typestyles you can use. Certain fonts offered by the printer definition may not be available on your printer. Refer to your printer manual for details on which typestyles are available with your printer. You can also use `PRINTER.TST` and `PRINTER2.TST` as described below to determine which typestyles will print on your computer.

It's a good idea to go ahead and test the fonts yourself. You can do this by printing the WordPerfect printer test documents `PRINTER.TST` (versions 4.1 and 4.2) and `PRINTER2.TST` (version 4.2 only). (These files are available on your Learning diskette.) You can also create your own test document if you want, and insert several font changes in it by using the **Print Format** menu (Ctrl-F8).

Q. How do I embed printer commands?

A. You can embed Epson printer commands in your WordPerfect document by following these steps:

1. Look up the printer function you want to use in your printer manual's Command Summary. You can use decimal values to represent any of the ASCII codes. These values are listed in the Command Summary. For codes between 32 and 126 decimal – printable characters – you can type the ASCII character itself instead of the decimal value.
2. From within WordPerfect, press Ctrl-F8. Then press A to display the **Cmd** prompt.

3. Type the decimal codes you want to insert, enclosing each number separately in angle brackets (< >). Do not type any spaces between numbers or brackets. (If you are using ASCII characters for codes between 32 and 126 decimal, don't type brackets around those characters.)

If you want to insert more than one printer command, simply type the commands one after the other, with no spaces and with no punctuation other than the angle brackets. All decimal codes must be enclosed separately in the angle brackets.

4. Press Enter.

For example: To insert a code in your document to turn on double-high printing (not available on all printers), press Ctrl-F8 and then A to display the **Cmd** prompt. The decimal format of the double-high command is 27 119 *n*. To tell the printer to turn *on* double-high mode, you must use 1 for the variable *n*, so type <27><119><1>. (Alternatively, you could use the ASCII character w instead of its decimal value 119, and type <27>w<1>.)

To turn off double-high printing and turn on italics, type <27><119><0><27><52> (or, alternatively, <27>w<0><27>4.) The command 27 119 0 turns off double-high printing, and 27 52 selects italic printing.

Note: If you press Alt-F3 after inserting a command, you see that WordPerfect translates decimal values between 32 and 126 into ASCII characters. For example, the <27><119><0><27><52> command in the above example is displayed as <27>w<0><27>4.

Although your printer recognizes these embedded printer commands, WordPerfect does not. Thus, if you send a code for, say, double-wide printing, you will have to make formatting adjustments yourself. WordPerfect does not

readjust margins, line spacing, and other formatting features to accommodate the double-wide text.

Q. I want to use SelectType to switch back and forth between letter quality and draft, but it doesn't work when I print WordPerfect documents. How can I make it work?

A. If you want to use SelectType to choose draft or letter quality (near letter quality on your nine-pin printer), you must modify WordPerfect's default font. The following instructions assume that font 1 is your default font.

You also need to delete certain printer initialization commands. Once you make these changes, WordPerfect documents print according to how you set SelectType, as long as the default font is in use.

Here are the steps to follow:

1. At the DOS prompt, type **PRINTER** and press **Enter**. If you get an error message, make sure you are in the \wp directory, or wherever your printer files are stored.
2. When the Printer Definition Program's main menu appears, press 3 to select **Printer Definitions**.
3. From the Printers Currently Defined menu press **B** to select the **Edit** option.
4. Now press the number that corresponds to your printer and then press **Enter**.
5. When the Edit menu appears, press 8.
6. When the new Edit menu appears, press 1.
7. Use the Del key to delete the entire line of **Shift Into Font** codes listed under font 1. Press **Enter**.

8. Now press 2. Delete the entire line of **Shift Out of Font** codes for font 1 (if there are any) and press **Enter**.
9. Press **Enter** to return to the previous menu.
10. Press 1 to select **Printer Initialization**.
11. Press 2 to select **Initialize Printer Before Print Job**.
12. Use the Del key to delete the entire line of codes. Press **Enter**.
13. Press 4 to select **Initialize Printer at Start of Page**.
14. Use the Del key to delete the entire line of codes. Press **Enter**.
15. Exit the program by pressing **Enter** until you reach the DOS prompt.

Note: If you make a mistake and wish to restore your initialization and font codes, go back into the **PRINTER** program and press 3 to choose **Printer Definitions**. Press **C** and type the number of the altered printer definition to delete that definition. Press **Enter** until you return to your DOS prompt. Then re-select that printer definition from within WordPerfect according to the instructions in the following question on graphics characters.

Q. How can I use graphics characters with WordPerfect?

A. All the Epson printers produced since 1985 have graphics characters, sometimes called the extended graphics character

set, or IBM graphics characters. However, these characters are not accessible through some of WordPerfect's printer drivers for Epson printers. (WordPerfect calls printer drivers *printer definitions*.)

Note: If your printer offers the graphics character set, but you are unable to print these characters, the first thing to do is make sure you have *selected* the graphics character set. You can select the graphics character set, depending on your printer, by using *SelecType*, setting a DIP switch, or by sending the ESC t 1 command. See your printer manual for details.

If the graphics character set is selected, but you are still unable to print graphics characters on an Epson printer that supports these characters, you should ask your software manufacturer for a driver for your specific printer model that offers graphics character support.

You can also create a new character table for your selected printer. If you have WordPerfect version 4.2, see the instructions on creating a character table in the WordPerfect "Defining a Printer Driver" manual. Use the EX-800 character table as a pattern if you have a nine-pin printer, and the LQ-2500 table as a pattern if you have a 24-pin printer.

A quicker method for accessing graphics characters is using the EX-800 printer definition (for nine-pin printers) or the LQ-2500 printer definition (for 24-pin printers) is described in the following section. However, be aware that when you use a printer definition that is different from your printer model, you may not have full access to your printer's features.

Note: Depending on the type of document you are creating, you may also want to insert a command in your document, <27><85><1>, to make your printer print unidirectionally. This enhances your output by making your graphics more precisely aligned. See the question on embedding printer commands for instructions on how to insert a printer command in your WordPerfect document.

Selecting a printer definition

To access graphics characters, select the EX-800 definition if you have a nine-pin printer (such as an FX printer), and the LQ-2500 definition if you have a 24-pin printer. Follow these steps:

1. From within WordPerfect, press Shift-F7, and then press 4 to select the Printer Control menu.
2. Press 3 to choose the **Select Printers** option.
3. Use the arrow keys to select a printer number (displayed in the lower left corner of your screen).
4. If the printer definition you need to use is not displayed at the top of the screen, press PgDn to list more printer definitions. When the appropriate printer definition is displayed on the screen, press the corresponding number to select it, and press Enter. Then enter the correct values for printer port and other settings.
5. Make sure the printer number used when you selected the printer definition is the *selected* printer. From the Printer Definitions menu, press Exit to return to the Printer Control menu. Press 1 to choose **Select Print Options**. Then press 1 again if you need to change the printer number, and type in the number.

6. Now return to your WordPerfect document by pressing F7 twice.
7. You can make the printer number selection a default setting by exiting WordPerfect and typing wp/s at the DOS prompt (you must be in the \wp directory) to display the WordPerfect setup menu. Then press Shift-F7, 1, and type in the default printer number. Press Enter twice, then press 0 to end setup and re-enter WordPerfect.
8. Now, whenever you want to use graphics characters, just make sure your DIP switch (or SelecType) is set for the graphics character set.

Q. How can I get WordPerfect's Line Draw function to work on my printer?

- A.** The WordPerfect Line Draw function uses the graphics character set. Although most Epson printers have these characters, the characters are not accessible through some of WordPerfect's Epson printer definitions. See the previous question on using graphics characters for a full explanation of how to print graphics characters using WordPerfect.

Q. How do I set up my page format so that my documents print in the right place on the page when I use my cut sheet feeder?

- A.** To get your documents to print correctly with a sheet feeder, you need to change your cut sheet feeder settings. You may also need to alter your Page Format settings.

Before determining your new settings, it's a good idea to run the printer's self test. This will show you the cut sheet feeder's printable page (cut sheet feeders cannot print as close to the top and bottom of the page as tractor feeders can). Your printer manual explains how to run the self test.

Changing your cut sheet feeder settings

1. From within WordPerfect, press Shift-F7, 4, and then 3 to display the **Printer Definitions** screen.
2. If you are currently using a printer number other than Printer 1, press the arrow keys on your keypad until the correct printer number is displayed at the lower left of your screen.
3. Press Enter twice to display the **Type of Forms** list. If selection 3, **cut sheet feeder**, is not already selected, press 3. Otherwise, press Enter. The screen displays the cut sheet feeder settings.
4. Enter 0 for the first two settings (**Number of Extra Lines Between Pages** and **Column Position of Left Edge of Paper**). (This lets your page format be determined solely by your WordPerfect page format settings.)
For **Number of Sheet Feeder Bins**, type the number of bins on your sheet feeder and press Enter.
5. Once you have selected the three settings, the list of cut sheet feeder definitions appears. Press the number corresponding to the Epson cut sheet feeder and press Enter.
6. You are now done with the sheet feeder settings, but you may need to adjust your WordPerfect page format settings. Press F7 twice to return to your document.
7. Since the cut sheet feeder has a built-in top margin that is determined by its physical limitations, you may need to adjust your WordPerfect top margin setting. Press Alt-F8, 5, 0, and then Enter to change your document's top margin

to 0. Once you try this setting, you can change it to whatever works best.

8. You may also need to alter your WordPerfect page length so that when the page prints, it doesn't run over to the next sheet of paper. Press Alt-F8, 4, and then 3. Make sure the form length is set to 66 (11 inches) for letter-sized paper, and press Enter. Then enter the number of text lines per page. (Print out a self test to determine the maximum number of lines that will print on a page.)

You will probably have to experiment to find the correct number of lines to use, since it depends on your cut sheet feeder's built-in margin, your WordPerfect top margin, and your line spacing (the number of text lines per inch).

9. Once you have determined which settings work best for your documents, you can make the Page Format settings your default settings by exiting WordPerfect and typing `wp/s` at the DOS prompt (you must be in the `\wp` directory) to display the WordPerfect setup menu. Press 2 to select **Set Initial Settings**, and then repeat steps 7 and 8 using your desired format settings.

WordStar® Professional

Getting Started

Use the WINSTALL program to select the printer driver you want as your default. (If you have already installed WordStar®, use the WSCCHANGE program instead of WINSTALL.) Most Epson printers are supported directly. Just choose the correct printer model and WordStar automatically installs the correct printer driver.

Here is a list of the printers supported by WordStar Professional Release 4.

FX-80 or FX-100

FX-85, FX-185, or FX-286

LQ-800, LQ-1000

LQ-1500

LX-80

MX-80 or MX-100 (with Grafrax^{PLUS})

RX-80

If you have an Epson FX-86e, FX-286e, EX-800, EX-1000, or LX-800, choose the FX-85 printer model. If you have an Epson LQ-500, LQ-850, or LQ-1050, choose the LQ-800 printer model.

Selecting Print Features

To use any of the print features listed in the following table, use the WordStar command shown on the right. Each dot command, such as `.CW` or `.MT`, must go on a separate line in your document, while Ctrl key commands such as `^PD` can be used within a line of text.

Printer feature	WordStar command
Doublstrike	^PD
Emphasized or bold	^PB
Horizontal Tabs	^OI (clear with ^ON)
Italic	^PY
Line Spacing	^OS or .LS or .LH
Justification	^OJ or .OJ
Margins	^OL or .LM, ^OR or .RM, .MT, .MB, .PO
Letter quality print	.LQ
Number of copies Print options	.RP
Page length	.PL
Sheet feeder bin	.BN
Pitch (character width)	.CW, .PA, .PN
Proportional spacing	.PS
Superscript, Subscript^	^PV, ^PT
Underline	^PS, .UL

Commonly Asked Questions

Q. What typesets, such as italic or proportional spacing, are available with WordStar Professional?

A. The README.TXT file describes the capabilities of the various printer drivers. Follow these steps to see the README.TXT file:

1. Insert the WordStar Installation diskette into drive A.
2. Type `A:README` at the DOS prompt and press Enter.
3. See the Information on Specific Printers section for a description of which functions work with the different printer drivers.

Q. How do I use a cut sheet feeder with WordStar?

A. To get WordStar to work with your cut sheet feeder, follow these steps:

1. Turn on your printer's cut sheet feeder mode using a DIP switch or SelecType, depending on your printer model.
2. At the DOS prompt, type `WSCHANGE` and press Enter.
3. When the prompt asks what file you want to install, type `WS` and press Enter. (If you have renamed your WordStar program file, type the new name of the file instead.)
4. When the prompt asks what file you want to save changes to, type `WS` again and press Enter. (If you have renamed the WordStar program file, type the new name of the file here also.)
5. When the Main Installation Menu appears, press **B** to select the **Printer** option.
6. When the Printer menu appears, press **B** to select the **Sheet feeders** option.
7. When the Sheet feeder menu appears, press the letter corresponding to the sheet feeder that most closely matches your cut sheet feeder model. WordStar currently gives you three choices for Epson printers. Here's how to decide which selection to make:
 - If you have a double-bin cut sheet feeder, choose the **Epson 2-bin letter & legal...LQ-1500** selection.
 - If you have an LQ-1500 printer with a single-bin cut sheet feeder, choose the **Epson LQ-1500 1-bin letter & legal...LQ-1500** selection.

- If you have any single-bin cut sheet feeder other than the LQ-1500, choose the **Epson 1-bin letter & legal...FX-85 LQ-800** selection.

8. Press **X** to return to the Printer menu.
9. From the Printer menu, press **E** to select the **Printing defaults** option.
10. When the Printing defaults menu appears, check to see whether the **Use form feeds** option is set to **ON**. If it is not, press **B** to select the option, and then press **Y** to turn the option on.
11. Press **X** twice to return to the Main Installation Menu.
12. From the Main Installation Menu, press **D** to select **WordStar**.
13. When the WordStar menu appears, press **A** to select the **Page layout** option. Then press **A** again to select **Page sizing and margins**.
14. If you haven't already done so, take a moment to run your cut sheet feeder's self test. This is a simple procedure that is explained in your printer manual. The self test shows you the maximum number of lines you can print using your cut sheet feeder. This number is printed at the bottom of the self test printout. You need this number to set your page length within WordStar.
15. From the WordStar Page sizing and margins menu, press **A** to select the **Page length** option. Type the number of lines printed at the bottom of the self test printout and press **Enter**.
16. Next, press **B** to select the **Top margin** option. Type the number of lines you want for your top margin and press **Enter**. Keep in mind that your cut sheet feeder will add two more lines to whatever number you enter. For example, if you want a one-inch (or six-line) margin, set the WordStar

top margin to **4**. That way WordStar will provide a four-line margin and your cut sheet feeder will add two more lines at the top, giving you a six-line, or one-inch, margin.

17. Now set the bottom margin. Press **C**, type the number of lines you want, and then press **Enter**. However, keep in mind that your cut sheet feeder generally adds three extra lines to whatever number you enter for the bottom margin. So to get a one-inch (or six-line) bottom margin, set the WordStar bottom margin to **3**. Your cut sheet feeder will then add three more lines.
18. Press **X** until you return to the prompt that asks you if you are through making changes and then press **Y**.
19. Now you must insert the appropriate **.BN** command at the beginning of every WordStar document you print using the cut sheet feeder. See the WordStar README document described in the previous question for information on which **.BN** command to use.

Note: To print on legal-sized paper with your cut sheet feeder, you must repeat Steps 12 through 19 using settings based on legal-sized paper.

Q. How can I use graphics characters with WordStar?

- A. WordStar Professional Release 4 does not fully support the graphics characters available on your Epson printer. Therefore, you have two options. The first is to contact MicroPro for assistance.

The second option is to use your Epson printer in IBM emulation mode if that mode is available on your printer. You must also reinstall your printer as an IBM printer by selecting an IBM printer driver instead of the Epson printer driver you chose when you installed your printer. See the

Getting Started section at the beginning of this Application Note for instructions on selecting printer drivers. Also see your printer manual for instructions on selecting the IBM emulation mode if it is available on your printer.

Q. How can I use the features of my printer that are not supported by WordStar commands?

A. WordStar doesn't let you directly embed printer commands in your document, but you can define four printer control strings and use them anywhere you want.

Here's how this feature works. You type a dot command followed by a string of codes called a printer control string. Then whenever you want to use that printer control string, you type the WordStar Ctrl key command that corresponds to that dot command.

Here are the four dot commands WordStar lets you use for printer control strings. On the right are their corresponding WordStar Ctrl key commands.

Dot command	Ctrl key command
.XE	^PE
.XQ	^PQ
.XR	^PR
.XW	^PW

Using printer control strings

1. Select the printer command you want to use from the Command Summary in your Epson printer manual. Note the hexadecimal values for the command codes.

2. Choose which one of WordStar's four dot commands you want to use for your printer control string. You can use .XE, .XQ, .XR, or .XW.
3. At the beginning of your document, type the name of the dot command, followed by the hexadecimal values for the Epson printer command you want to use.

For example, the command to turn on double-high printing is ESC w 1. The hexadecimal values for the command are 1B 77 1. If you want to use the dot command .XR, you would type:

.XR 1B 77 01

If you want the dot command .XW to turn off double-high printing, you would type on the next line:

.XW 1B 77 00

4. To use the commands at a later point in your document, type ^PR before the characters you want to print double-high, and ^PW after the characters you want double-high.

For example, if you type:

This is an example of ^PRdouble-high^PW printing

your printer will print the word "double-high" in double-high printing.

2. Choose which one of WordStar's four dot commands you want to use for your printer control string. You can use `XF`, `XO`, `XR`, or `XW`.

3. At the beginning of your document, type the name of the dot command, followed by the hexadecimal values for the Epson printer command you want to use.

For example, the command to turn on double-high printing is `ESC W 1`. The hexadecimal values for the command are `1B 77 01`. If you want to use the dot command `XR`, you would type:

```
XR 1B 77 01

Here's how it works: the word XR tells the printer to use the dot command XR to turn off double-high printing. You would type on the next line the hexadecimal values for the command you want to use.
```

4. To use the commands at a later point in your document, type `^PR` before the characters you want to print double-high, and `^PW` after the characters you want double-high.

For example, if you type:

```
^PR
This is an example of double-high printing.
^PW
```

Using printer strings

1. Select the printer command you want to use from the Command Summary in your Epson printer manual. Note the hexadecimal values for the command codes.

